



ORIGINAL ARTICLE

Current status of demoralization and its relationship with medical coping style, self-efficacy and perceived social support in Chinese breast cancer patients



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Abstract

Background and objectives: To explore the current status of demoralization syndrome and its relationship with medical coping style, self efficacy and perceived social support in Chinese breast cancer patients.

Methods: A total of 375 Chinese patients with breast cancer participated in this study. Data were primarily collected using questionnaires, including a general information questionnaire, the Demoralization Scale-Mandarin Version (DS-MV), the Chinese version of the Medical Coping Style Questionnaire, the Strategies Used by People to Promote Health scale, and the Perceived Social Support Scale. The mean value+1 standard deviation was used to determine the cutoff of DS. Associations between demoralization and other variables were analyzed by Pearson's correlation and multivariate linear regression.

Results: The mean score of the DS-Total was 26.95 ($SD=12.83$, range=0–60), with the prevalence of low demoralization 16.8%, medium demoralization 72.8% and high demoralization 10.4%. Demoralization was significantly associated with medical insurance (provincial, city medical insurance, and new rural cooperative medical insurance), having at least one child, type of operation (breast-conserving surgery or breast plastic surgery), income, medical coping style (i.e., resignation), self-efficacy and perceived social support (adjusted $R^2=0.539$, $p<0.001$).

Conclusion: Demoralization syndrome is a common mental disorder among Chinese patients with breast cancer. Financial status, having children, type of operation, medical coping style, self-efficacy, and perceived social support are significantly related to demoralization. It is

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important and necessary to have early and regular monitoring of demoralization using validated instruments specifically designed to measure it.

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Introduction

Patients with cancer may experience significant emotional and psychological distress for various reasons, including fear of death and disease recurrence and the uncertainty of the illness.^{1,2} Patients with breast cancer, particularly female patients, have higher levels of psycho-pathological symptoms, because of mastectomies, menopause, hormone decline, and the various side effects of chemotherapy (e.g., hair loss and edema).³

Demoralization syndrome has emerged as a key psycho-pathological concept in palliative care over the past two decades, which stems from a persistent perceived inability to cope with one's present circumstances and typically occurs in patients at the end of life.¹ Distinguishing it from other emotional and psychological distress, including depression, is central to demoralization's conceptualization, as it encompasses symptoms that include extreme feelings of hopelessness, helplessness, and meaninglessness, fear of losing one's dignity, and a sense of incompetence or failure.^{1,2,4} There are several measures of demoralization, including: the Demoralization Scale (DS),² the Diagnostic Criteria for Psychosomatic Research (DCPR),⁴ the Subjective Incompetence Scale (SIS), and a revised version of the DS (the 16-item DS-II).⁵ Among them, the self-report DS and the structured DCPR interview are commonly used worldwide. The reported prevalence of clinically significant demoralization ranges from 13.0% to 52.5%, partly owing to the use of different tools, different clinical thresholds, and the heterogeneity of the patient populations.⁵⁻⁷

Demoralization syndrome among patients with advanced cancer has been found to be associated with higher symptom burden,⁸ less perceived social support,⁵ anticipatory fears about pain and suffering, and feeling one is a burden on loved ones.⁹ Moreover, research on demoralization syndrome indicates that it is more closely associated with a desire to hasten death and is a stronger predictor of hastening death than depression.^{5,6,10} Thus, it is not only a significant mental-health concern, but also an urgent problem that needs to be studied thoroughly and solved quickly. Since demoralization syndrome is a treatable psycho-pathological condition, establishing the criteria for its clinical diagnosis will make it possible to focus better on potential therapeutic interventions.³ The critical challenge is to distinguish demoralization syndrome from other types of emotional and psychological distress, especially depression.^{1,5} Progress towards this end has been made in that considerable research has revealed that demoralization and depression have distinct but related features. Demoralization entails loss of hope and meaning, and an extraordinary loss of anticipatory pleasure, rather than

general anhedonia, whereas the core symptom of depression involves a loss of pleasure and interest in the present moment.⁵ In addition, one study has found that a large proportion of cancer patients had low depression but high demoralization in China.¹¹

Numerous studies have been conducted to assess the correlates of demoralization (e.g., demographic characteristics and physical, psychiatric and psycho-social factors) in order to develop efficacious interventions to remedy this significant worldwide concern.^{1,5,7,12-14} However, current findings are limited by the fact that so few variables have been studied. As such, further research is warranted to obtain a better understanding of this syndrome. Furthermore, breast cancer has already replaced lung cancer as the most common cancer among female patients with cancer in China.¹⁵ To date, the current status of demoralization symptom and its relationship with other aspects of the experience of breast cancer patients have not been studied in mainland China. Given this situation, the aim of this study was to extend knowledge about demoralization by assessing its current status and exploring its relationship with medical coping styles, self-efficacy, perceived social support, demographic characteristics, and the clinical features of breast cancer patients.

Materials and methods

Study subjects

Participants were recruited using convenience sampling at the General Surgical Wards V and VI (Breast and Thyroid) of the Second Xiangya Hospital, from August 2018 to January 2019. Participation was limited to patients who met the following criteria: (1) 18 years of age or older; (2) a confirmed diagnosis of breast cancer by pathological examination; (3) no cognitive impairment, and being able to comprehend the study's questionnaires; and (4) being willing to participate. Patients with recurrent tumors, distant metastasis, neoadjuvant chemotherapy, current uncontrolled mental illness, and cardiovascular disease were excluded from the study. Of the 432 patients who met the study criteria, 375 (86.81%) patients completed the study, with 57 patients dropping out of it for various reasons (33 lost interest in the study and refused to finish it; 17 were interrupted due to treatment or other reasons, which led to incomplete information; and 7 refused to fill in missing data). There were no differences in the demographic characteristics or clinical features of those who accepted or declined participation.

Table 1 DS-MV scores.

Variables	Min	Max	Mean $\pm$ SD	Mean $\pm$ SD (Standard score)
DS-Total	0	60	26.95 $\pm$ 12.83	
DS-MV sub-scale (Standard score)				
Dysphoria	0	18	3.91 $\pm$ 3.58	0.78 $\pm$ 0.72
Loss of meaning	0	16	6.77 $\pm$ 3.47	1.35 $\pm$ 0.69
Disheartenment	0	18	7.59 $\pm$ 4.32	1.26 $\pm$ 0.72
Helplessness	0	12	3.86 $\pm$ 2.64	0.96 $\pm$ 0.66
Sense of failure	0	11	4.82 $\pm$ 2.27	1.20 $\pm$ 0.56

Note: DS-MV = the Mandarin Version of the Demoralization Scale; DS-Total = the DS-MVs total score; Standard score = Sub-scale score / Sub-scale's number of entries.

Measures

A series of questionnaires were used in the study to collect data by trained research assistants. The general information questionnaire included a demographic section and a clinical features section. The demographic section (e.g., age, education, and occupation.) was completed independently by patients, whereas the clinical features section (e.g., family history of breast cancer, type of operation, type of pathologies, and phase of management) were gathered from clinical records.

The 24-item DS-MV, which was used to assess the severity of demoralization, has five sub-scales: loss of meaning, dysphoria, disheartenment, helplessness, and sense of failure; the Cronbach's α for the entire scale is .92.¹⁶ The DS-MV's total score (DS-Total) is obtained by summing the item scores, with a total score of 30 or more used as the cut-off score for clinically significant demoralization.^{12,13,16} The 20-item Medical Coping Style Questionnaire (C-MCMQ), which is frequently used to assess the medical coping styles of patients in relation to a specific disease, was used to measure patients' coping styles. The C-MCMQ has three sub-scales: confrontation, avoidance, and resignation, which have been found to have test-retest reliabilities of .64, .85 and .67, respectively.¹⁷ The 28-item Strategies Used by People to Promote Health (C-SUPPH) was used to evaluate patients' perceived self-efficacy, which are measured on three sub-scales: stress reduction, making decisions, and positive attitude,¹⁸ The sub-scales have good internal consistency (ranging from 0.79 to 0.88), and the Cronbach's α and the Guttman split-half coefficient for the entire scale are .970 and .925, respectively, according to previous research.^{19,20} The 12-item Chinese version of the Perceived Social Support Scale (C-PSSS) was used to evaluate the social support that individuals perceived they received from various interpersonal resources, such as family, friends, and significant others. The original English version of the scale was developed by Zimet et al.²¹ The C-PSSS, which was translated by Jiang Qianjin, has two sub-scales: family endogenous support and family exogenous support.

Two researchers explained the basic procedures and purpose of the survey to the patients using uniform instructions. Patients were required to complete questionnaires independently and bring them back to the site.

Statistics

Descriptive statistics were used to summarize the demographic and clinical data, and patient's current state of demoralization, medical coping styles, perceived self-efficacy, and social support. Two-group comparisons were performed using *t*-tests and multiple-group comparisons were performed with one-way analysis of variance (ANOVA). Associations between different variables were measured using Pearson's correlation (Data normally distributed by normality test). Variables with significance differences were included as independent variables in a multivariate linear regression analysis that used the forward stepwise procedure. The statistical analyses were conducted using SPSS version 22.0 (SPSS Inc., Chicago, IL, USA). All the presented *p* values are two-tailed; *p* < 0.05 was considered statistically significant.

Results

Current status of demoralization according to the DS-MV

The mean DS-Total score was 26.95 (*SD* = 12.83), with "loss of meaning" having the highest standard score, and "dysphoria" having the lowest standard score (Table 1). More recent publications have argued for a "mean plus *SD*" as a threshold for clinical significance when determining the cutoff of a scale.²¹ Therefore, the Demoralization Scale was subdivided into three distinct categories based on a mean of 26.95 (*SD* = 12.83): low DS (14.11), medium DS (14.12–39.78), and high DS (39.79), identifying 63 cases (16.8%) with low demoralization, 273 cases (72.8%) with medium demoralization, 39 cases (10.4%) with high demoralization.

Factors associated with demoralization

Table 2 shows the demographic and clinical variables that were significantly related to demoralization.

Table 3 shows that DS-MV had significant positive correlations with resignation, and significant negative correlations with confrontation, C-SUPPH and C-PSSS.

Table 2 Comparison of the DS-Total among groups with different demographic characteristics and clinical features.

Variables	N(%)	DS-Total Mean $\pm$ SD	<i>F/t</i>	<i>p</i>	Variables	N(%)	DS-Total Mean $\pm$ SD	<i>F/t</i>	<i>p</i>
Age (years)			1.79 ^a	0.15	Income(RMB)			6.91 ^a	< 0.001
18–30	23(6.1)	25.00 $\pm$ 8.50			1000 or below	66(17.6)	27.86 $\pm$ 10.93		
31–45	149(39.7)	27.91 $\pm$ 11.77			1001–1999	76(20.3)	32.55 $\pm$ 15.34		
46–60	165(44.0)	25.64 $\pm$ 13.22			2000–2999	58(15.5)	24.33 $\pm$ 14.14		
Above 60	38(10.1)	30.08 $\pm$ 16.38			3000–3999	84(22.4)	27.27 $\pm$ 11.40		
Education			8.93 ^a	< 0.001	4000 or above	91(24.3)	22.99 $\pm$ 10.38		
Primary educational level	65(17.3)	34.78 $\pm$ 10.69			Marital status			5.84 ^a	0.001
Secondary educational level	77(20.5)	24.81 $\pm$ 14.50			Unmarried	13(3.5)	14.08 $\pm$ 7.88		
High school level	109(29.1)	24.62 $\pm$ 13.31			Married	324(86.4)	27.00 $\pm$ 12.88		
Tertiary college level	44(11.7)	23.75 $\pm$ 11.08			Divorced	27(7.2)	30.59 $\pm$ 12.96		
Bachelor degree or above	80(21.3)	27.59 $\pm$ 10.33			Widowed	11(2.9)	31.82 $\pm$ 2.27		
Occupation			1.78 ^a	0.12	Religion or not			0.60 ^b	0.55
Prepared staff	84(22.4)	25.42 $\pm$ 12.10			Yes	17(4.5)	25.12 $\pm$ 15.59		
Workman	17(4.5)	25.94 $\pm$ 13.29			No	358(95.5)	27.04 $\pm$ 12.70		
Business	16(4.3)	33.94 $\pm$ 15.86			Family history of family cancer			1.20 ^b	0.23
Farmer	150(40.0)	28.01 $\pm$ 12.20			Yes	29(7.7)	24.21 $\pm$ 9.62		
Retired	79(21.1)	25.11 $\pm$ 13.40			No	346(92.3)	27.18 $\pm$ 13.05		
Others	29(7.7)	27.69 $\pm$ 13.63			Operation modes			7.00 ^a	0.001
Having at least one child			–3.75 ^b	< 0.001	Modified radical mastectomy	259(69.1)	28.00 $\pm$ 13.33		
Yes	362(96.5)	27.41 $\pm$ 12.74			Breast-conserving surgery	105(28.0)	23.52 $\pm$ 11.23		
No	13(3.5)	14.08 $\pm$ 7.88			Breast plastic surgery	11(2.9)	35.00 $\pm$ 6.05		
Life status			1.96 ^a	0.10	Pathological type			–1.63 ^b	0.10
Alone	23(6.1)	32.78 $\pm$ 13.08			Carcinoma in situ	31(8.3)	23.35 $\pm$ 9.62		
Mate	61(16.3)	24.90 $\pm$ 12.52			Invasive cancer	344(91.7)	27.28 $\pm$ 13.04		
Children	30(8.0)	25.40 $\pm$ 9.70			Phase of management			3.33 ^a	0.020
Mate and children	246(65.6)	27.29 $\pm$ 13.24			After pathological diagnosis	85(22.7)	27.56 $\pm$ 12.43		
Others	15(4.0)	23.93 $\pm$ 10.24			After breast surgery	76(20.3)	30.50 $\pm$ 15.85		
Medical insurance			4.96 ^a	0.001	During chemotherapy	185(49.3)	25.77 $\pm$ 11.43		
Self-pay	5(1.3)	36.00 $\pm$ 2.23			Chemotherapy completed	29(7.7)	23.38 $\pm$ 12.20		
New rural cooperative	166(44.3)	29.50 $\pm$ 12.87			Other chronic diseases or not			–2.36 ^b	0.020
City medical insurance	138(36.8)	25.19 $\pm$ 12.47			Yes	65(17.3)	30.83 $\pm$ 14.99		
Provincial health care	42(11.2)	21.57 $\pm$ 9.60			No	310(82.7)	26.14 $\pm$ 12.20		
Others	24(6.4)	27.00 $\pm$ 16.15							

Note: DS-MV = the Mandarin Version of the Demoralization Scale; DS-Total = the DS-MV's total score.

^a The variables were analyzed by one-way ANOVA.

^b The variables were analyzed by *t*-tests.

Table 3 Correlations of the total DS-MV and its sub-scales' with the C-MCMQ sub-scales, the C-SUPPH, and the C-PSSS.

Variables		Confrontation	Avoidance	Resignation	C-SUPPH	C-PSSS
DS-Total	<i>Pearson r</i>	−0.21	−0.07	0.39	−0.61	−0.43
	<i>p</i>	<0.001	0.150	<0.001	<0.001	<0.001
DS-MV sub-scale						
Dysphoria	<i>Pearson r</i>	−0.09	−0.18	0.35	−0.40	−0.29
	<i>p</i>	0.07	0.001	<0.001	<0.001	<0.001
Loss of meaning	<i>Pearson r</i>	−0.09	0.02	0.23	−0.41	−0.35
	<i>p</i>	0.10	0.66	<0.001	<0.001	<0.001
Disheartenment	<i>Pearson r</i>	−0.25	0.001	0.31	−0.59	−0.33
	<i>p</i>	<0.001	0.986	<0.001	<0.001	<0.001
Helplessness	<i>Pearson r</i>	−0.18	−0.10	0.38	−0.44	−0.33
	<i>p</i>	<0.001	0.056	<0.001	<0.001	<0.001
Sense of failure	<i>Pearson r</i>	−0.22	−0.06	0.26	−0.58	−0.41
	<i>p</i>	<0.001	0.214	<0.001	<0.001	<0.001

Note: DS-MV = the Mandarin Version of the Demoralization Scale; DS-Total = the DS-MV total score; C-MCMQ = the Chinese version of Medical Coping Style Questionnaire; C-SUPPH = the Chinese version of Strategies Used by People to Promote Health scale; C-PSSS = the Chinese version of the Perceived Social Support Scale.

Based on the univariate and bivariate analyses, 10 independent variables were entered into the regression analysis to predict demoralization, with unordered variables set by dummy variables. The final model of the forward stepwise regression accounted for over half of the variance (adjusted $R^2 = 0.539$, $p < 0.001$) in demoralization, which means its prediction of demoralization was satisfactory. The following explanatory variables are listed in Table 4 in the order of their interpretative ability, from highest to lowest: new rural cooperative insurance, city medical insurance, C-SUPPH, provincial medical insurance, resignation, C-PSSS, having at least one child, breast plastic surgery, breast-conserving surgery, and income.

Discussion

Current status of demoralization syndrome in patients with breast cancer

Our study found 63 cases (16.8%) with low demoralization, 273 cases (72.8%) with medium demoralization, 39 cases

(10.4%) with high demoralization, with a mean score that reached 26.95 ($SD = 12.83$), analogous to the results of previous studies.^{1,4-7,21} A similar study of cancer patients in Taiwan that used the same tool (DS-MV), reported a mean DS-Total score of 31.05 ($SD = 14.87$), but prevalence was not reported, and the majority of patients were outpatients, not inpatients with breast cancer.¹² Moreover, the prevalence of clinically significant demoralization in another Taiwanese study of 411 hospitalized patients with cancer (no specific type of cancer) was 49.4%, but the mean DS-Total score was not reported.¹³ These different results may be attributed to the different tools and clinical threshold used and the heterogeneity of patients from different palliative care settings and cultures, as well as countries. Furthermore, it is worth mentioning that only female patients participated in our study, and women are more likely to suffer from negative emotions and severe psychological problems.

The analysis of the standard scores of the five sub-scales of the DS-MV showed that "loss of meaning" had the highest mean score, whereas "dysphoria" had the lowest, which suggests that caregivers might pay greater attention to an

Table 4 Results of multiple linear regression on the variables associated with demoralization.

Variable	Standardized Beta	95%CI		<i>T</i>	<i>p</i>
		Lower	Upper		
C-SUPPH	−0.499	−0.579	−0.420	−12.411	<0.001
Resignation	0.262	0.185	0.339	6.652	<0.001
C-PSSS	−0.174	−0.258	−0.090	−4.089	<0.001
Having at least one child	0.157	0.077	0.238	3.830	<0.001
Income	−0.090	−0.179	−0.001	−1.988	0.048
New rural cooperative/Self-pay	−0.596	−0.903	−0.289	−3.816	<0.001
City medical insurance/Self-pay	−0.575	−0.876	−0.274	−3.759	<0.001
Provincial medical insurance/Self-pay	−0.343	−0.547	−0.139	−3.313	0.001
Breast-conserving surgery/Modified radical mastectomy	−0.101	−0.175	−0.026	−2.649	0.008
Breast plastic surgery/Modified radical mastectomy	0.106	0.033	0.179	2.844	0.005

Note: C-SUPPH = the Chinese version of the Strategies Used by People to Promote Health scale; C-PSSS = the Chinese version of the Perceived Social Support Scale.

The Adjusted R^2 for this final model was .539 ($F = 34.664$, $p < 0.001$).

explicit emotional disorder, such as “dysphoria”. If this is so, it indicates that caregivers need to attend more closely to less obvious problems, such as “loss of meaning”, to improve the lives of patients with breast cancer. Therefore, future studies should recognize the value of the sub-scales or key items of scales of demoralization syndrome measures as potential predictors.

Factors associated with demoralization

Previous studies of patients with cancer that have been conducted in Oceania, North Africa, Asia, and Europe have shown that age, gender, education, being single, having a partner, unemployment, physical problems, type of treatment, social support, sense of dignity, anxiety, and depression all have significant correlations with demoralization.^{7,10,12–14,16,22} The regression analysis in the current study showed that the variables in our final model explained 53.9% of the variance in demoralization. The results revealed that medical insurance (provincial, city medical insurance and new rural cooperative medical insurance), having at least one child, type of operation (breast-conserving surgery and breast plastic surgery), and income statistically predicted demoralization syndrome.

Demographic and clinical related factors

Our findings are generally consistent with a Taiwanese study that found monthly income and type of treatment (medical, surgical) were significantly associated with demoralization, using the same tool (DS-MV).¹³ Nevertheless, our results stand in contrast to the results of some studies that found no significant association between demoralization and age, education, marital status, occupation, type of pathology, or phase of management. However, some studies have found, as our does, that monthly income is negatively related to demoralization.^{13,16,23} The reason for this might be that the heavy financial burden of daily life for low-income patients, coupled with the large medical cost of long-term chemotherapy, increase negative emotional experiences that make them more prone to clinically significant demoralization. With respect to medical insurance, it has been argued that reliance on welfare contributes to loss of mastery, depression, and hopelessness,¹⁰ but one relevant study found that demoralization was not necessarily a consequence of being a welfare recipient, *per se*.²⁴ Although there are few relevant studies for comparison, we would like to explain the association between demoralization and financial burden. The provincial, city medical insurance, and the new rural cooperative medical insurance in China are stable forms of low-cost health insurance that share hospitalization costs and can reduce patients’ financial burden. There are no relevant studies for comparison with regard to type of operation, but we think patients treated with breast-conserving surgery suffer relatively less emotional distress because this type operation is performed at an early stage of breast cancer and it has a less deleterious effect on body image, which might lead to a lower level of demoralization.²⁵ In contrast, patients treated with breast plastic surgery might suffer from severe demoralization. It may be related to the current limitations of breast plastic surgery, that

patients may suffer more postoperative complications and have longer convalescence.²⁶ Finally, the current finding that having more than one child was positively associated with demoralization differs from a study conducted in Taiwan that reported “having children or not” did not predict demoralization.¹³ We think a change in patients’ role in raising their children may play an intermediary role. It is well known that the traditional values of Chinese society favor the gender roles of “breadwinning men and homemaking women”. However, in present Chinese society, mothers not only need to work, but also take primary responsibility for raising children. Thus, when mothers become seriously ill and have to reduce their role of caring for their children, negative emotions are easily aroused, which may cause various emotional or psychological problems, such as demoralization syndrome.

Medical coping styles

Coping styles are a crucial resource for patients faced with advanced illnesses, including cancer. An adaptive and effective coping style (e.g. meaning-making) has been suggested to be essential for mitigating patients’ multiple existential concerns, restoring inner homeostasis, reducing distress, preventing negative psychological reactions, and enhancing rehabilitation and recovery.^{27,28} Besides, the findings of an RCT suggest that patients with advanced cancer benefited most from CALM (Managing Cancer and Living Meaningfully) therapy in terms of reduction of such distress and improvement on the generalized anxiety, demoralization, spiritual well-being, and attachment security.²⁹ A study by Bovero et al.,³⁰ which used the Brief Coping Orientation to Problem Experienced (Brief-COPE), found positive reframing and self-blame were the only coping styles that emerged as significant predictors, besides demoralization, of dignity-related existential distress among cancer inpatients. However, our study found resignation was positively correlated with demoralization ($r=0.389$, $p<0.001$) and it emerged as the only coping style that predicted demoralization ($B=0.262$, $p<0.001$). These findings are similar to those of a previous study that demonstrated avoidance and acceptance-resignation were both correlated positively with demoralization and predicted demoralization ($B=0.62$, $p=0.003$; $B=1.0$, $p=0.001$, respectively), using three sub-scales (confrontation, avoidance and acceptance-resignation) like ours in the Medical Coping Modes Questionnaire.³¹ These results suggest that a breakdown in coping lies at the heart of demoralization among patients with breast cancer and that different coping styles or strategies might influence demoralization. Among them, a passive coping style that implies “giving-up” to some degree, such as acceptance-resignation, may increase the risk of demoralization, and should be given more attention by patients’ caregivers.

Self-efficacy

Self-efficacy is a positive psychological resource and essential mediator, which regulates a person’s motivation to persevere in the face of difficulty through cognitive, motivational, affective, and decisional processes.³² Stu-

dies have shown that patients with cancer who have high self-efficacy tend to have better problem-solving ability and health-promoting lifestyles (e.g., regular exercise), more information and support services, greater persistence in achieving desired psychosocial outcomes (e.g., better adjustment, and less distress and anxiety), fewer physical and psychological symptoms (e.g., less pain and fatigue), a higher quality of life, and a greater sense of well-being.^{33,34} On the other hand, low self-efficacy is associated with higher trait anxiety and elevated psychological distress.³⁵ We defined self-efficacy in this study as perceived confidence in managing symptoms and concerns related to the diagnosis and treatment of breast cancer. However, breast cancer is a frightening experience that can undermine one's sense of self-efficacy. The current analyses found self-efficacy correlated best with demoralization ($r = -.612$, $p < 0.001$) and acted as a major protective factor ($B = -0.499$, $p < 0.001$), which confirmed the importance of self-efficacy, and suggested that low self-efficacy can aggravate one's sense of helplessness and incompetence and accelerate demoralization. These findings remind us that demoralization can be ameliorated by effective interventions that help to build and sustain self-efficacy in patients with breast cancer, such as exercise.

Perceived social support

Social support and the concept of attachment security are operationalized in the construct of social relatedness, which has been demonstrated to have a negative relationship with demoralization in different groups of people, including immigrants,³⁶ psychiatrists,³⁷ parents,³⁸ and patients with cancer.^{5,8,10,23} In addition, our findings on inpatients with breast cancer showed that perceived social support was negatively correlated with demoralization ($r = -.425$, $p < 0.001$) and was a protective factor against demoralization ($B = -0.174$, $p < 0.001$). This negative relationship highlights the importance of being engaged in a positive and powerful social-support network in order to maintain one's morale and buffer against psychological distress. We recommend more attention be given to potential demoralization in patients with cancer, not only by regular monitoring, but also by proactively strengthening their social resources. Furthermore, the current results can serve as a reminder to governmental authorities and medical institutions to accelerate medical and social welfare reforms that benefit patients with cancer.

Conclusion

In conclusion, while acknowledging its limitations, this study's findings have theoretical and practical significance. First, to our knowledge, it is the first indigenous study conducted in mainland China to explore the current status of demoralization and its risk factors among patients with breast cancer. Second, this study's results should be beneficial to many researchers and caretakers (e.g., physicians, nurses, and family caregivers) by highlighting the need to focus more on psycho-pathological distress among patients with progressive diseases (e.g., cancer) in mainland China. Third, by deepening our understanding of the

psychological suffering of patients with cancer, the results indicate the need to treat the patient as a whole person, rather than concentrating on the disease process itself, in order to improve patients' health-related quality of life, both mentally and physically. Finally, this study provides new evidence about the associations between important variables, which might help caregivers respond more effectively to demoralization, as patients confront breast cancer, undergo treatment, experience recovery, or approach the end of life.

Limitations

This study has some limitations. First, since the study used a cross-sectional design, it cannot offer any insights into the causal mechanisms that underlie the observed associations between the variables. Therefore, longitudinal studies or randomized controlled trials (RCT) are necessary to understand and control demoralization better. Second, breast cancer (with a better prognosis) is more prevalent and is more common among females compared to other types of cancer. As only female patients with breast cancer participated in this study, further research is needed to study different groups of patients with distinct heterogeneity and different types of cancer. Third, the characteristics of the present sample may have biased the results because convenience sampling was used and patients were enrolled at single study site. Therefore, future studies should use random samples from different study sites and increase the sample size.

Ethical considerations

The study was approved by the Medical Ethics Committee of the Second Xiangya Hospital, Central South University, China. All patients signed an informed consent form before completing the questionnaires.

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Conflict of interest

The authors have no conflict of interest to declare.

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